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STEEL BEASTS

Professional
Version History

2. 460

- Updated the electronic user manual PDF
- Adjusted the *Stay* position tactic so that units will not reposition to maintain the formation if a vehicle of the same platoon is being killed
- Adjusted the BUSHMASTER's ready ammo loadout
- Adjusted the gun sound of the 1.2t TECHNICAL-T "106mm RR"
- Fixed the ammunition assignment of the 1.2t TECHNICAL-T "HMG"
- Fixed the ammunition assignment of the BMD-2
- Animated the troop door of the BMD-2 now
- Adjusted the LEOPARD AS1's ready ammo loadout to include one round of WP and HESH each
- Adjusted the strength of artillery barrage and air strikes
- In the AAR, the status message "Destroyed" will no longer be shown red if the vehicle was dead already
- All troops' unit descriptions in the lower left status bar of the map screen will now describe correctly whether they are a heavy weapons team of a general rifle squad
- Increased the sensing distance of units *under indirect fire* to 50m
- Infantry behaves now with more self-preservation on *Engage* routes; if under direct fire they go prone and attempt to fire back to suppress the attacker. This also addresses bug #1129
- Infantry will now find cover in **any** terrain, depending on the *Bumpiness* value of the applied terrain theme for each given terrain type. With bumpiness "0" – the default for old scenarios – dismounted soldiers won't have cover. At 100% bumpiness they will disappear. The controlling player of a dismounted squad will still see them somewhat elevated to make it easier to see the location of his own soldiers. This also addresses bug #1289
- Replaced the old September 2000 artwork of the BMD-2
- Dismounted infantry on the move will assume prone positions faster now when coming under fire, and be more reluctant to move out again
- Adjusted the treatment of HEAT warhead impacts which could occasionally result in less or no damages, depending on the frame rate
- Adjusted message transfer between Host and Client for infantry combat related events
- Reduced the excessive strength of HE grenades fired from various AFVs' smoke discharger tubes
- In the assembly hall infantry units are now listed as teams and squads, no longer as "platoon"
- Air strikes send an automatic "End mission" command to the queue once that they are executed now, and can no longer be repeated.
- Updated the armor files of
 - CENTAURO
 - BRDM-2
 - BRDM-2/AT
 - BTR-80
 - T-72M1
- Fixed a typo in an instrument of the IFV PIZARRO
- Fixed the naming of resource files to restore some seemingly missing thermal textures



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- Fixed a bug with the PIZARRO IFV's ammo count
- Fixed a bug where troops in the process of dismounting "flickered" between prone and standing position for clients in network sessions
- Fixed a bug with the LEOPARDO 2E where the roll angle of the gunner's daysight wasn't shown in the TIM
- Fixed a bug with the reloading of CV90/40 ammunition magazines
- Fixed a bug which prevented on re-runs of the same scenario the transfer of network messages between host and client machines that infantry units were shooting
- Fixed a bug with the procedure of emptying the spent brass bag of the IFV PIZARRO that occurred when a human player entered a previously computer-controlled vehicle
- Fixed a bug that would crash SB Pro if a UAV accelerated to maximum speed at high altitude
- Fixed a number of scaling issues with wide aspect ratio screens and unusually stretched windows
- Fixed the ammunition count for all M2A2 and M3A2 ODS BRADLEYS
- Fixed another bug with the ammunition reload command
- Fixed a bug that made the ASLAV-CS disappear from the scenario editor
- Fixed a bug that replaced the CH-47 with a model of the Mi-24
- Fixed bug #978; now that *Apply if* works properly, the scaled scoring works as intended too
- Fixed bug #1039; *Coil* and *Herringbone* formations now work again

2. 448

- Helicopters can now be resupplied from trucks
- Adjusted the performance parameters of a number of APFSDS rounds if fired from the L55 barrel of the LEOPARDO 2E
- The MT-LB F0 no longer dismounts troops
- Fixed a problem with the reloading procedure of the PIZARRO
- Fixed a bug that cause a misalignment of daysight and unity sight of the IFV PIZARRO on widescreen monitors
- Fixed a bug where a change of daylight for old scenario files was not shown in the preview unless the scenario was saved again with the "File... Save as..." function
- Improved support of MATROX® TRIPLEHEAD2Go™ by extending the field of the eye view depending on monitor screen aspect ratio
- Adjusted the targeting behavior of computer-controlled PIZARRO units
- Adjusted the behavior of computer-controlled units in the presence of water obstacles. They should avoid water more now, but will enter it on routes with Breach tactics. This should allow the fording of small streams at suitable spots while avoiding large losses to careless maneuver near rivers
- Adjustment of scoring control logic:
 - To **capture a region** you must have three times the force strength of the enemy in the region. Capturing implies that you initially don't control the region and should be used in that case
 - To **hold a region** you need only have at least a third the force strength of the enemy in the region. Holding a region implies that you initially control the region and again, that's when it should be used



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- The **combat value** of forces is being used to determine the force strength ratio. With a single rifle soldier being 1, an IFV being 10, and MBTs being worth 25 points each. An additional bonus is given for unit coherence (a platoon of MBTs is worth a lot more than four MBTs of the same type scattered all over the place). Damages result in negative modifiers (e.g. a mobility kill reduces the value of a vehicle by half)
- Simplified user interface for CV90/35 and Pizarro for non-Danish and non-Spanish versions respectively
- Updated the armor files of
 - CH-47 CHINOOK
 - CH-146 GRIFFON
 - LEOPARD 2A4
 - LEOPARDO 2E
 - M1A1(HA) (this also addresses bug #743 where certain spots were particularly vulnerable to HESH ammunition)
 - Mi-24 HIND
 - T-72M1 (this also addresses bug #743)
 - T-80U
 - URAL truck
- Added the MT-LB F0, a forward artillery observer vehicle based on the MT-LB
- Added a Technical vehicle – an SUV with a 106mm recoilless rifle
- Added a Technical vehicle – an SUV with a 14.5mm DShK heavy machine gun
- Units with Guard tactics will no longer automatically unload troops
- For the dismounted artillery observer it is now possible to use the zoom hotkey (*N*) while accessing the observation device
- The *Shoot here* command will now work also with zoomed view
- The dismounting squad of the CV90/35 is now equipped with AT-4 launchers instead of RB57
- For dismounted troops the hotkey (*F7*) will now give the squad leader's point of view
- The BRDM-2/AT is now realistically limited to a +/-70° traverse of its missile launcher
- Fixed a bug where when deleting all subscores from the scoring formula of an existing mission the "OK" button was greyed out so a bogus score had to be added to close the dialog box
- Fixed a bug that kept the computer-controlled commander of the IFV PIZARRO in a loop to override the gunner on a target while in the process of clearing the Bushmaster gun's empty brass bag, then overriding again to the bag clearing position
- Fixed a bug that would show the damage "Unknown" in the *Damage, if...* dialog box
- Fixed a bug where the fire location of a windmill would originate at the wing tip of a windmill; it is now the rotor head
- Fixed a bug with the LEOPARD 2; it will now correctly show F000x as the range if a target closer than 200m was lased
- Fixed a bug where crashed helicopters would continue to twitch while lying on the ground
- Fixed bug #381; the *Player, if...* function now also hands over the ownership of organic infantry
- Fixed bug #384 by adjusting the behavior of vehicles in the presence of water obstacles



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- Fixed bug #627 so that *Driver* damage will now result in a vehicle immobilization (also see bug #1286), including direct driving commands from a human operator in the external observer's position
- Fixed bug #684 – winter trees no longer have their foliage in the thermal view
- Fixed bug #698; all ground vehicles with SACLOS guided missiles will no longer erect their launchers if the battle position is tilted sideways beyond the tolerance limits for proper missile guidance. This should serve as a visual clue about the suitability of any given spot
- Fixed bug #704; invalid
- Fixed bug #945 where turret crew elimination could be circumvented by occupying the driver's position (see also bug #627)
- Fixed bug #983 where *Apply if...* conditioned scoring feature did not work properly
- Fixed bug #1063; invalid (RTFM)
- Fixed bug #1215 where the activation of the binoculars from a crew position made the helicopter unresponsive to *WASDX* keyboard control inputs
- Fixed bug #1216 where JAVELIN teams seemed to blow themselves up upon missile launch
- Fixed bug #1222 where the icons in the lower right 3D view of the CENTAURO and VEC were missing
- Fixed bug #1229 where in network sessions computer controlled PIZARRO crews seemed to shut down turret power occasionally, thus rendering the thermal imager useless
- Fixed bug #1238 where PELE and Canister rounds were accidentally disabled as selectable munitions for 120mm gun systems
- Fixed bug #1240 (vehicles with a remote weapon station had no ammo by default)
- Fixed bug #1251; the LEOPARD 2A4 is now allowed to unload rounds from the gun, too
- Fixed bug #1254 where popping turrets would always begin their flight from a default orientation with the hull, not their actual position at the moment of detonation
- Fixed bug #1261; vehicles with automatic loaders should now correctly be registered as "killed" if their crew is incapacitated
- Fixed bug #1264 and #1265, also #1093; the user interface and automated behavior now is more consistent with respect to the mounting/ dismounting of troops. While the player is in the vehicle commander's position (*F7*) the troops will mount/dismount only on direct command (*Shift+U* and *U*). In the external observer's position (*F8*) however the procedure will be automatized to avoid unintentional separations of troops and their supporting transport vehicle
- Fixed bug #1267; vehicles will try harder now to avoid collisions with buildings
- Fixed bug #1268; the tutorial "CV90/40 Gunnery G" will no longer crash
- Fixed bug #1269; assault bridges laid by BIBER or MT-55 will no longer show up on the other party's map in network sessions
- Fixed bug #1285 so that air defense artillery units will be the primary weapon system to engage UAVs (which have very low priority for computer-controlled units), while other units will fire only small and medium caliber weapons



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- Fixed bug #1286 partially; a tank with incapacitated driver will now stop moving until the driver has been treated by an ambulance unit (e.g. M113 Medic)
- Fixed bug #1287 where missiles in flight were not visible to client machines in a network session

2.446

- Changed the implementation of Shot result resolution in network sessions
- Changed the implementation of the 35mm KETF round to be more reliable in the CV90/35's Point Target mode
- Fixed a bug with the Leopard 2 that would induce the wrong range if a target closer than 200m was lased
- Fixed bug #1226 where TOW-2B missiles were seemingly flying over the target without detonating

2.444

- Dismount team leaders are now selectable positions in the network session Assembly Hall
- The laser range finder will now work in the LEOPARD 2A5's thermal sight even if wide field of view has been selected
- Fixed a bug with the LEOPARD 2 fire control system; if ranges of under 200m are lased, the fire control system will now activate battlesight range
- Fixed a bug that caused a text mixup in the last line of the log state report
- Fixed bug #1229 partially where the fire control system state of vehicles of the same platoon (without damage) could be out of sync
- Fixed bug #1262, and automatically also #1260 and #1280; adjusted a line of sight calculation glitch – dismounted infantry will no longer spot through hills, or fire
- Fixed bug #1263; added an automatic adjustment of the sound variations to the limit of channels that the sound hardware can play simultaneously

2.443

- The TC of the last vehicle in column formation will now focus his attention to the rear
- Fixed a problem with the ammo loadout of all those vehicles that previously started with 0 rounds of a particular type. In cases where a scenario made with previous versions shows a problem with an incorrect ammo type being loaded, it should now be opened in the mission editor, the ammunition settings be reset, and then saved again to remedy the situation.
- Fixed a problem with certain cases when reloading ammo resulted in a crash

2.442

2.441

- While loading and unloading troops, the vehicle icon in the F1 view will now blink in magenta and grey
- A position offset between CH-47 LODs has been corrected to improve collision detection
- The thermal view of many helicopter rotors have been corrected
- Fixed bug #1076 where the rotors of helicopters would disappear in the F8 view beyond a certain flight height



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- Fixed bug #1096 where in the LEOPARD 2A5's commander's place a position adjustment while having the binoculars activated would result in the disappearance of the 3D turret interior
- Fixed bug #1169; the collision avoidance of computer controlled units has been improved with respect to obstacles of shipping containers
- Fixed bug #1186; the hatch and cupola are no longer rendered in the vision block view for the M1A1 TC's position
- Fixed bug #1212 so that T-72s will now suffer appropriately from smoke obscuration
- Fixed bug #1225, a visual glitch with the M1A1's turret bustle
- Fixed bug #1235; the UAV is now being attacked by air defense artillery units, if in range
- Fixed bug #1270; suspension damage will now only slow down helicopters rather than crashing them

2.440

- Supports now Matrox® TripleHead2Go™ multi-screen rendering
- Changed the screen rendering to maintain an aspect ratio for all sights that will preserve essential elements, e.g. the range reading of a primary sight, which used to be clipped off for extreme cases of wide aspect ratio screens
- Improved the stability of the UGV while driving it in network sessions
- Fixed a bug that made Hellfire missiles miss if fired by a human operator from the WSO's seat in the TIGER
- Fixed bug #762; troops will now enter buildings only on "Hold" orders to allow better control about their autonomous positioning
- Fixed bug #966; HEAT rounds will no longer be able to perforate multiple target vehicles even if their residual energy is not used up
- Fixed bug #1018, the flight trajectory for the Hellfire missile

2.439

- Updated WISE driver

2.438

- Added WISE driver prototype

2.436

- LEOPARDO 2E:
 - Loader's hatch now open by default
 - ballistic shield doors now rotate inwards
 - Changed a texture of the commander's monitor
 - Commander's thermal monitor now limited to 12x zoom
 - Added rear view mirrors if driver is unbuttoned
 - Added frontal tow hooks
 - More tolerance for the operation of the peri's ballistic shield flap
 - Peri control panel now activated (peri on/off switch)
 - Gunner's day sight magnification switch now clickable
 - If the day sight is in 3X, the laser range finder can now longer be fired, even if the thermal sight is in 12x
 - PELE and Canister rounds now available for Leo 2E
 - With battlesight active, the primary sight will now read F150x instead of F100x (x for any ammo type code)



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- Adjusted letter assignments for primary sight display
 - A for CL3143 and DM53
 - b for DM33 and DM33-PELE
 - C for SI sgr95; also DM12A1, but with SI sgr95 ballistic parameters(!)
 - d for coax MG, as usual
- SI sgr95 will now be listed as „HE-T“ in the Spanish version
- Vehicle speed shown in driver's place
- Driving in reverse will no longer add fuel to a vehicle
- Changed NATO targets' color scheme
- Cardboard targets will now disappear if hit (except boresight panels)
- IFV PIZARRO:
 - In the case of ballistic computer damage, the light „Fallo“ on the gunner's manual range input control panel will now light up in red
 - The ammo index wheels behind that flap on the commander's control panel are now fully functional and have immediate effect on the gunner's sight display, and on gun superelevation. The default setting is now 6-3 [APFSDS-HE] but it will not adjust automatically if the ammo loadout changes to [HE-APFSDS]. In that case the (human) commander must change them manually to 3-6, or 6-6 for AP only ammo loadout, etc.
 - Buttons „Segur“ and „Fuego“ now switch the weapon arming state correctly. Depending on system state it may not be possible to operate them however
 - If „Segur“ is active, and a computer controlled gunner spots a target, and the human TC presses Space to order the gunner to fire, he will now automatically activate „Fuego“, then open fire
 - Adjusted the rather complex system state changes where the buttons „Rear Norm“ and „Rear Serv“ are involved. Most likely this will see a drastic simplification for all non-Spanish versions
 - Adjusted the ammo count, since the 30mm gun doesn't chamber rounds in advance
 - Adjusted the ammo stowage limits to 118/134 and 80/70
 - Turret lock lever now flips 180°, not 90. Will only work in 12 and 9 o'clock turret positions.
 - Adjusted firing prediction.
 - Track target for about 2 to 3 seconds
 - Press laser, keep it pressed (this stores the averaged tracking rate in the ballistic computer's memory (and while the laser button is pressed, the tracking rate does NOT (!) get updated)
 - With the first laser shot, the reticle gets displaced practically instantaneously
 - The now displaced reticle must be centered on the target again
 - Fire
 - If the target changes direction, the laser button must be released and a new tracking sequence must be started
 - The TC can no longer override the gunner while not seated
 - Fixed bug #1220; adjusted the procedure to empty the bag of spent cartridges and ammo chain links



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- Procedure time reduce to three minutes
- Servo power will disconnect as soon as turret is at approximately 7 o'clock position (green servo light blinks on main control unit, yellow „Etab on/off“ light remains on)
- Added activity message to inform the user about the procedure in progress
- Added a countdown in F8 view for the remaining cartridge capacity of the spent brass bag
- „Reload all“ command with a computer-controlled gunner will make him rotate the turret to 2 o'clock. Servo power will be disconnected (see above)
- Initial status when starting up the Pizarro is now
 - „Segur“ active
 - Gun not ready
 - 7.62mm coax selected
 - Battlesight 600m range activated
- Increased the speed with which smoke and HE rounds for the grenade discharger are reloaded
- Added „open protected“, and „170°“ states for turret hatches; commander's hatch now „open protected“, gunner's hatch now closed by default
- Added „Lead prediction“ damage in the mission editor's context menu
- Disabled the „lase to waypoint“ method for the TC while inside the turret
- Laser results that will be displayed in the sights range from 0.2.0. to 9.9.9. (9995m, actually)
- Ranges accepted for firing are from 100m to 3000m; below (99m) or above (3001m+) battlesight will be activated.
- If a range beyond 3000m has been lased, the range reading (all four digits, e.g. 3.4.1.P.) will now blink
- Turret „boot sequence“:
 - Commander removes turret and gun lock
 - Commander pulls Big Red Button from Main Control Unit (MCU)
 - Commander activates „Servos“ button
 - Commander activates „Etab on/off“ button which will blink for a few seconds while the gyros speed up
 - Gunner switches on manual range control panel
 - Day sight should now show 0.6.0.A, MG with RAF6 should be active, also battlesight)
 - Gunner turns laser key „on“
 - Gunner switches on thermal sight (cool-down period 5min)
 - Gunner tests a manual range input (enter random figure)
 - Gunner or commander presses „Rear Norm“ button (MCU; before this only the MG can be fired - no 30mm ammo is selectable). Control light „Cierre Atras“ will light up
- Added a laser key in the 3D interior to see the laser status more easily
- With battlesight selected, and a change of the ammunition type, the battlesight range will now update immediately



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- In case of stabilization damage, now the "Etab on/off" button of the MCU will start blinking. It is still possible to use powered turret traverse though
- Manual range inputs below 100m or above 3000m will now activate the battlesight
- Made sure that the "Fin Cinta" button is now synchronized between gunner's and commander's place in network sessions
- Updated Spanish translations. There is now „Spanish for tankers" and „Spanish for mechanized infantrymen"
- Added the AGM-114K Hellfire missile, and renamed the AGM-114A to the more appropriate designation AGM-114C
- Fixed bug #1218; adjusted the power of tandem HEAT warheads with a uniform additional value to retain the power of the main warhead after passing through ERA protected areas. These tandem warheads are now overpowered when confronting non-reactive armor arrays and therefore should be replaced with their non-tandem warhead counterparts to avoid absurd combat results

2.433

- Fixed a bug that affects MERCEDES GD 240, mine plows, rollers and MICLIC trailers. Old missions with these attachments will load up fine, and new ones created with them will also be fine. However, if one edited an older scenario file in one of the previous versions and then saved it, the devices would be missing (or the MERCEDES G type changed). Recently edited scenarios should be checked for inconsistencies, and eventually require to be edited and saved again.
- The last vehicle in column formation will now cover the rear
- Updated texture files for IFV PIZARRO (radios) and MBT LEOPARDO 2E (radios, and exterior desert and thermal)

2.432

- LEOPARD 2A5: Fixed a clipping bug with the TC's viewing position in the CTC version
- Increased the UAV's vulnerability
- Raised the road travel speed of computer controlled units from 7 km/h to be proportional to the light level
- LEOPARD 2: Further refinements of the RÜCKSTEUERUNG (parallax motion compensation now enabled)
- LEOPARD 2: ZÜ mode now enabled in BEOBACHTEN fire control mode

2.431

- Multispectral smoke now available for Russian vehicles too, looks white in daylight (unlike GALIX smoke grenades)
- Changed the ammunition dialog box for squads. There's now a distinction between squad MG and rifles, with 1250 rounds default for the MG and 200 rounds per rifle
- CV90/35: Now with hull sensor for roll movement, and the fire control system compensates for it as well as for pitch (other CV90 variants still won't have roll compensation)
- The firing rates of small arms for squads have been reduced
- Updated the CV90/35's multi-function panel (MFP) display
- Improved the rendering method for multi-scene rendering (e.g. LEOPARDO 2E commander's place). Trees will no longer flicker
- Fixed bug #687; LEOPARD 2 RÜCKSTEUERUNG is now fully implemented for all variants. While on the move and shooting a stationary

target (dynamic lead not activated) the LEOPARD 2 now adds or reduces the range to target for up to 170m from the point of last laser usage, as well as compensate for its own angular motion (VERSCHLEPPUNGSKORREKTUR)

2.430

- Multi-scene rendering enabled for LEOPARD 2A5 DK too. It will now render the surrounding terrain and the TIM view for the commander
- Changed acceleration and top speed of the LEOPARD's peri
- Updated the armor file for the LEOPARDO 2E
- Changed the properties of all medium caliber delayed-fuse high explosive multi purpose rounds. They're no longer on steroids now
- Slightly improved the contrast and brightness of illuminated instrument panels in the IFV PIZARRO
- Pressing the ammo counter reset button in the IFV PIZARRO while reloading the ammunition will no longer result in eternal repetition of the „Traverse right!“ voice command

2.429

- Changed some pathfinding routines in the presence of point obstacles
- Fixed a bug where, if BMP was the selected file format, the automatic screenshot of the assembly hall at the start of a network session was stored in JPG format but with *.BMP suffix
- Fixed bug #1162; for heterogeneous platoons the individual vehicle icons in the F1 view will now show the correct icon

2.427

- Found and fixed a bug with the ammunition selection dialog box (pressing the new buttons „DEFAULT A“ or „DEFAULT B“ could lead to problems)
- Fixed a CTD bug that could cause any INSTANT ACTION scenario to crash
- Changed a number of IFV PIZARRO related issues

2.426

- Fixed bug #1202; heterogeneous platoons will now keep their ammunition settings. This will however only work with scenarios made from scratch. Old scenarios still might run into trouble (vehicles ending up with no ammunition at all, or firing the ammunition of a different weapon system, ...)

2.425

- Updated 14 of Volcano's scenarios (5 single, 9 multiplayer)
- Added 25 of Volcano's new scenarios (3 single, 22 multiplayer)
- Eight scenarios added from Scenario Design Contest #1
- Added seven new high detail textures, mostly water
- Updated the 29 PALMS map
- Added a 29 PALMS theme, with WADIS enabled
- LEOPARD 2: If coax is selected, the gun will now immediately leave the loading position and be ready to fire. The loader will continue to load the main gun.
- CV90/35
 - Disabled the rendering of troop sprites while the player is in the mounted troop leader's position

- Fixed a troop team icon error which gave the fire team icon to both parts of the squad
- Added „umbrella position“ for commander’s hatch
- Adjusted the position of the squad leader in the troop compartment
- Made the troop compartment’s VIS screen accessible in the 3D view (troop leader)
- To accommodate the new position of the troop leader, some hotkeys needed to be changed:
 - *F10* = (reserved for future use)
 - *F11* = squad position
 - *Alt+F10* = Next unit
 - *Shift+F11* = next engaged unit
 - *Shift+F12* = screen capture

Moving to and from the squad position actually changes the unit that the player occupies (vehicle or squad) and the unit icon in the 3D view will reflect this. However, when the squad is mounted, this unit switching is pretty transparent and it just appears as if the vehicle has another crew position called the squad position. When the troops dismount, the shortcuts to the vehicle crew positions are disabled

- TCs can no longer change the properties of the gunner’s primary sight if the gunner is incapacitated
- Dimmed the brightness of the map display in the LEOPARDO 2E commander’s place
- Computer controlled crews are less reluctant to using canister munitions now
- Fixed bug #1024; adjusted the size designator for teams to be NATO Stanag 2019 (App 6) compliant
- Fixed bug #1137 (reloading process); turrets are now being oriented forward if the loading process gets interrupted (driving at speeds in excess of 6km/h, manually or on a route)

2.424

- Added 13 more tutorials for the LEOPARDO 2E
- Added a hotkey (ZÜ HOTKEY; default is *Arrow down*) for the TIVI target designator in the LEOPARDO 2E’s vision block view (*F4*)
- Added an option for the LEOPARDO 2E commander to manually type in the range while in KH MODE
- The LEOPARDO 2E commander can now change the properties of the gunner’s primary sight – as long as there is no human gunner present.

2.423

- Added the CENTAURO 105mm gun system (external view)
- Added the LEOPARDO 2E (crewable)
- LEOPARDO 2E: 3D driver’s place; navigation display remains non-functional
- LEOPARDO 2E: Gunner’s day sight view has two magnification settings, 12x (like all Leo 2s) and 3x
- LEOPARDO 2E: Added eight tutorials (gunnery, so far)
- Changed the resource file structure to facilitate smaller downloads for future patches and minor updates
- Enabled simultaneous scene rendering; the commander’s place of the LEOPARDO 2E now renders vision blocks, map screen, and the thermal imaging monitor simultaneously. The driver’s place shows the vision blocks as well as the rearward driving cam.



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- Fixed a bug that erroneously limited the maximum distance at which vehicle emplacements are rendered
- Changed the method of camera positioning in internal 3D views
- Added a rule to the target prioritization algorithm to reduce a target's threat level if immobilized and with no way to operate the turret
- Fixed a bug that set the same lighting conditions in the map editor as last used in the mission editor. The map editor will now preview the terrain with full lighting again, and maximum visibility
- Fixed a bug with the CALYTRIX LVC GAME integration that could result in application crashes (CTD) at startup.
- Fixed a bug that could cause a CTD when moving a selected route point of a unit close to the unit itself

2.422

- CV90/35
 - Added the barrel camera and TIS views to the VIS screen
 - Changed surround view cameras to black & white
 - Changed the hotkey for the VIS screen. NUMPAD * now toggles through the different views

2.421

- CV90/35
 - Changed the initial state of the fire control system to STATIONARY GUNNERY MODE
 - The troop leader can now direct the mounted combat by using the „SHOOT HERE“ and related commands
- Improved the frame rate when there is lots of smoke and dust in the foreground – most noticeably on slower computers
- Fixed a bug with the LVC Game gateway
- Fixed a bug that may have caused a massive number of air burst animations over HE barrage zones
- Fixed a bug that caused vehicles in reverse to go forward
- Updated the new M1A1 armor file
- Added sound buffers to prevent small arms fire clipping effects
- Fixed bug #284 where text messages could not be sent if the AAR control window was obscuring the chat tool's channel selector button
- Fixed bug #452 where the map view wasn't accessible after the player's vehicle had been killed
- Fixed bug #457 where hotkeys were still active while typing text messages in the chat tool in network sessions
- Fixed bug #558 (also #557, #375); the HIND's unguided rockets are now fired more rapidly, and in salvos
- Fixed bug #625; invalid
- Fixed bug #669; units will evade artillery fire better now
- Fixed bug #764 which made the turret traverse sound too silent in the LEOPARD 1A5
- Fixed bug #765 where double-tapping sight view keys would switch control from joystick to mouse and immediately use the mouse position instead of centering it first
- Fixed bug #767; the BMP-1 now *really* fires the 73mm gun sound
- Fixed bug #779; smoke and dust particles now have a randomized lifetime

- Fixed bug #945, where a crew member could be duplicated if the turret crew were all dead, the player would jump to the driver's place, then back into the turret. The vehicle could then be given drive commands from any turret crew position
- Fixed bug #1023; occasionally impact events were recorded twice in the AAR and displayed as separate events

2.420

- Narrowed the coincidence window for the CV90/35 to prevent rounds falling short after changing the ammunition feed
- Added and updated new ambient sounds

2.419

- Fixed a bug where the infantry of a spawned IFV would remain under computer control once that the dismount command was given
- Fixed bug in which the position of a tank plow that a human player manually lowered on a client machine was not being transmitted to the host machine
- Fixed bug in which *Ctrl+S* while in the planning phase was errantly trying to save the mission to file, which would corrupt the mission file
- Finalized CV90/35DK prototype.
 - To access the squad peri and the VIS screen go to the commander's position (*F7*); while the squad leader is mounted in the CV9035 you can also access some views of the CV9035 itself from the *F7* position:
 - *F4* will take you to the CV9035 squad peri
 - *Alt+F1* is the rear camera view
 - *Alt+F2* is the left camera view
 - *Alt+F3* is the right camera view
 - For the gunner and commander the VIS screen will display either view; the lower right button on the VIS screen will toggle between the three camera views
 - As with the VCS screen, press the magnification hot key (*N*) when the mouse cursor is over the screen and the viewpoint will move much closer to the screen. Pressing *N* again will toggle the viewpoint back to normal. As with other vehicles, pressing *N* when the mouse is not over anything special will move the viewpoint forward a bit, and pressing *N* again will move it back.
 - The hot keys *Alt+F1*, *Alt+F2* and *Alt+F3* will show the camera views in the full window
 - Fixed a bug that generated one lase event in the gunnery AAR for every camera movement of a UAV in „TARGET LOCK“ mode. Which were a lot
 - Fixed a bug where, if the troops of the lead vehicle were killed, the rest of the platoon's vehicles would no longer mount or dismount the vehicle
 - Fixed a bug where the icons of tanks drowned in rivers would turn purple, or blink in grey and purple

2.417

- New M1A1 external model and damage model
- New item in the mission editor's *Options menu* to set a lower limit for the light level of a mission, which would apply when the sun goes down. This can prevent the screen from going completely dark which would only frustrate the player



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- The light level will now affect the detection range and detection time of crew positions without thermal sights, although a target that fires can still be seen in the dark up to the maximum visibility range. The visibility setting in the mission editor should be set for fog or dust or haze at full brightness, not for reduction because of darkness. Otherwise muzzle flashes and eventually headlights, flares, etc..., will not be seen
- Low light levels will slow down the CC drivers. In near pitch blackness they go about 7 km/h
- Improved six existing sound effects, and added eleven new ones
- Thermal imaging systems are now degraded by (thick) dust
- The dust splashes from artillery will now show up in the thermal sights, with a similar heat level as the ground
- Added airstrike sounds
- Improved sound effects for cluster munitions
- The „woosh“ sound for incoming artillery fire has been reduced to about one second
- The time between cluster munitions air burst dispersal and effect on the ground has been reduced to five seconds
- Artillery map graphics will show up only 20 seconds after impacts, if it was not called by the player (otherwise it's shown as normal). The Instructor Host can still see all impacts immediately
- Fixed bug #469; the drop-down menu of players showed incorrect crew position assignments
- Fixed bug #950; there was a size discrepancy between the M1's LOD3 and LOD1 model.

2.416

- Reduced the density of the dust clouds while making them a bit bigger to preserve a high frame rate

2.415

- Artillery animations and effects changed
 - HE barrage now comes without smoke, but creates dark explosion clouds and dust clouds that will linger and drift (but not with a cycling animation)
 - It is now possible to call barrages with a 50:50 mix of HE and smoke (similar to old HE barrages). Again, only smoke objects will have repeating animations while other dust effects will last longer, but linger and drift

2.414

- Implemented a „TARGET LOCK“ mode for UAV sights. The target lock will turn on when you lase a point and it will turn off when you start to control the camera again. For the joystick, there is a 3 second period after lasing that the joystick movement will not cancel the target lock. This was necessary because the joystick will almost certainly be offset when the point is lased. The user will have to center the joystick within 3 seconds of lasing if he wants the target lock to continue. This seems much less annoying, although it does mean that you will have to re-lase whenever you move the camera control.

2.413

- Fixed a crash bug that would occur if line of sight calculations were confronted with lots of smoke objects



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2.412

- Fixed a glitch with the LEOPARD 2's ballistic shield doors for the primary sight (missing texture, opening angle)
- The default flight height for UAVs is now „normal“

2.411

- Added the „grid coordinate after lase“ function to the dis-mounted FO and to the FIST-V

2.410

- Fixed a bug that could result in a crash if the sky was lased from the UAV

2.409

- Fixed a bug that would show merged units in the AAR immediately after finishing a scenario (would not happen if the AAR was loaded from the *Main Menu*)
- Improved the control loop for position measurement/position control to improve the coincidence behavior for all vehicles

2.407

- Changed the video resolution of the UAV to 512x512 pixels
- Fixed bug #688; Sound propagation is now dampened in the vertical axis as well

2.404

- A new unit is available – a medium-sized, unmanned aerial vehicle (without armament options). For the generic model the Sperwer UAV has been chosen, although this UAV does not represent the actual performance characteristics of the Sperwer. Place it on the map like any other unit. It can be controlled by a human player during solitaire and network training sessions, similarly to the UGV control options (Q and Z will change the flight height, not the sensor mast). If the UAV is on autopilot (you haven't manually steered it off a route) then when it gets to the end of the route it will fly in a circle. UAVs will not send reports about enemy **unless** a human operator lases an enemy; it will then be marked on the map. Consequently, computer-controlled units will hold their fire in the presence of a UAV **unless** it is under control of a human player. The F7 view of the UAV is mute. (There is still sound from the external position)
- Added an air strike option for 2x500lb bomb drops per strike. Note that you have to set the proper checkmark in the support window in the mission editor first
- Response times for all time-on-target artillery calls have been reduced
- Added an H-hour display to the map screen to facilitate artillery fire plan development training. You set the H-hour in the mission editor, *Options* menu. H-hour can also be referenced in conditionals, like *Mission time* and *Incremental time*
- Added an option to the mission editor to define the Time of Day of a scenario. This will adjust the lighting of the scenery (still no shadows though, or the rendering of a sun) and update the brightness level and direction of the light source at runtime. To make it work properly, it's important to select



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the correct local time offset from UTC based on the longitude of the map used. Old scenarios will not automatically adopt the dynamic lighting, it must be set and saved with this version (or later)

- UGVs are no longer a global option for all troops, but must be activated on a per-unit basis
- The passwords dialog box has been moved from the *Options* menu to the *File* menu
- The menu entry *View... Unity Sight* has been removed from the LEOPARD AS1, CH146, CH47, M2 BRADLEY, M3 BRADLEY, STRV122, and TIGER which had the menu entry but no unity sight
- The menu entry *View... Peri* has been removed from the CH47, FIST-V, HIND, M113AS4, MRH90, and TIGER which had the menu entry but no commander's periscope
- The menu entry *View... GPSE* has been removed from the BUSHMASTER truck, CH146, CH47, M1025 HMMWV, M113 ENGINEER, M113 REPAIR, M88, MRH90, and TIGER which had the menu entry but no sight extension
- The menu entry *View... GAS* has been removed from the CH47, HIND, and Tiger which had the menu entry but no auxiliary sight
- RBS70 SAM now correctly shows in the map as an air defense unit right after being placed in the mission editor
- Fixed a bug where in some scenarios made with older SB Pro versions (between versions 2.390 (?) and 2.403) units would be given unlimited ammunition without intention

2.403

- Updated the LEOPARD AS1 3D model and armor file (closed a ballistic hole in the hull front)
- Mission briefings:
 - Much longer Summary texts are now allowed
 - Editing an existing text no longer deletes text at the end, nor makes it other text show up (e.g. the format tags)
- Set the default sky textures
 - Desert: Day Hazy01.bmp
 - Winter: Day Overcast03.bmp
 - Woodland: Day Cloudy01.bmp
- Reduced elevation and depression of many cal .50 mounts to more realistic levels of approximately +30°/-20°
- A screenshot is now automatically generated when the Host/Instructor Host clicks on the Go button in the network session Assembly Hall
- Time-stamped text messages are now saved in the HTML reports
- Modified the LOS calculations to avoid situations where computer-controlled units remain oblivious to enemy presence which is in plain sight but where the LOS ray sample is accidentally being blocked
- Fixed bug #349 (using the laser range finder on own platoon members resulted in erroneous range readings)
- Fixed bug #605; the „stun time“ for the commander after pressing the „7“ hotkey was increased from 25 seconds to two minutes. There will be a reset when the player enters the gunner's position again or presses the „1“ key
- Fixed bug #639; spawned troops of APCs are now properly under control for human operators in network sessions



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- Fixed bug #939; if the CO drops from a network session, control of spawned units will be transferred to the player next in the command hierarchy
- Fixed bug #964; units marked as known to the other side will no longer disappear during the planning phase
- Fixed bug #1042; computer controlled units will now properly engage troops inside of buildings with HE or HEAT ammunition where this is available and useful
- Fixed bug #1084; user names are now being stored in the AAR files correctly
- Fixed bug #1150: Improved the ammunition selection for moving targets obscured by foliage. The computer-controlled vehicle commander will now put preference on kinetic energy rounds
- Fixed bug #1151: The visibility checkmark for routes of computer-controlled units will now update immediately
- Fixed bug #1159; Selecting the mine roller equipment will now unselect the mine plow (and vice versa)
- Fixed bug #1161 (the MICLIC didn't work properly in missions created from version 2.386 and newer)

2.399

- Fixed a few problems with the new incremental AAR saving
- Fixed some issues with the HTML report
- Disabled suspension damage when a vehicle is deeper than about half a meter in water

2.398

- Added new sky textures to the standard installation, and a dialog box in the Mission Editor's *Options...* menu to select a scenario specific sky texture.
In the mission editor Alt+S allows bringing up the file selection dialog box in the F1 view for a quicker preview.
Guidance for texture artists:
 - The center of the texture orients south; west is at the left quarter, east is to the right of the center
 - The lowest line determines the color of the fogging that is applied to the scene, so it should be a nearly neutral grey, usually
 - Texture dimensions should be 2:1, e.g. 1024x512

2.397

- Added a logistics state report which can be displayed in the map view and printed from the *File...* menu during the execution phase; for platoon members it will show only the state of their own platoon, for CO and XO vehicles the state for the entire company is shown
- It is now possible to copy route chains and paste them to other units during the execution phase
- AARs are now incrementally saved to disk every 30 seconds (and purged from system memory)
This eliminates the problem of long missions with huge maps crashing that are always close to the 2GByte RAM limit for 32 bit applications. New AAR files are incompatible with older SB Pro versions (but old AAR files can still be read)
- AAR files sizes in the dialog box are now shown in MBytes, not Bytes

2.396



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- Found and fixed the same nondescript bug that would cause crashes in prior versions (in network sessions)

2. 395

- Added color coding to the vehicle symbols in the F1 view; the vehicle icons at the bottom of the 3D view will show purple when there are troops loaded and gray otherwise. The occupied vehicle will now be shown brighter than the others
- Found and fixed a nondescript bug that would cause crashes in prior versions (single player mode)
- Ground clutter is now not drawn around all buildings and bunkers (out to about 3 meters)
- A bug was fixed that caused troops to occasionally wander far away
- Troops will no longer seek cover unless given an SB battle position with Hold, Defend or Guard tactics. As before,
 - **Hold** and **Defend** will also cause the troops to go inside nearby buildings.
 - **Guard** will cause them to stay outside nearby buildings. If there are no nearby buildings they will look for cover in nearby woods.
 - Having „no tactic“ or **Stay** tactics will result in the troops not looking for any cover and so staying where they are.Note that if you click on a unit icon at the bottom of the 3D view and order the troops to a new position the waypoint at the end of the new route will have no BP (none tactics) unless you use the „assault to“ order. So, if you want the troops to move to a spot and go into a nearby building or find cover, use „assault to“. If you want the troops to NOT go in a building nor find cover, use another movement order such as „advance to“ or „retreat to“
- Fixed a problem with the option „print displayed map“ that caused a black printout
- Added prototype of NH-90 helicopter (MRH 90)

2. 393

- Fixed a glitch in the multi-function panel of the CV90/35

2. 392

- More work on the CV90/35 interior
- Fixed a bug that allowed PELE rounds on occasion to penetrate deeper than they were supposed to before fragment generation

2. 391

- Added the CV90/35 interior
- Fixed a number of issues with the ASLAV-25's reticule
- Fixed bug #925 (ASLAV default ammo load with no HE rounds)

2. 389

- A bug was fixed where the ground would show the skybox in certain situations (amphibious landings against a steep shore)

2. 388

- With unlimited ammo activated, the PIZARRO will now no longer stop after firing 130 rounds to clear the bag for scabbards and spent brass
- Fixed HIND's ammo count from 14,700 to 1,470



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- Helicopter door gunners' MGs' (cyclic) rate of fire is now reduced to a more realistic rate of about 1000 RPM
- Fixed bug #485; helicopters now no longer turn to 235° direction if arriving at a battle position. Instead they will behave like normal vehicles, facing forward
- Actual ammo designations now displayed instead of „SPEC. A" and other cryptic „slot labels"
- 30mmx173 MP-T-SD impact vector now shows the same color and diameter both in „GUNNERY AAR" and „TACTICAL AAR" impact event

2. 387

- Tweaked the stab system a bit to remove some jitter
- The soldiers' attached guns were not being carried with them at times, which caused them to be scattered about when they were killed in their vehicles
- Implemented bumpiness effects at full strength
- Adjusted the stabilization imperfection. It is now restricted to the gun elevation but not the turret rotation
- Fixed a bug which made the map editor crash if the map data contained a certain object type

2. 385

- Added a function to extract a theme file from any given scenario. In the mission editor, select the menu *MAP... EXTRACT THEME*. Save it, then start the map editor and open the theme in it, edit it to your liking, and save it. Back in the mission editor you can now update the scenario file. This was necessary to allow you to adapt the mobility properties of the terrain according to the activation of the „bumpiness" factor (see below, version 2.374)
- Added five new artillery tutorials, and updated some BRADLEY tutorials

2. 384

- Fixed a bug where unbuttoned troops were vulnerable to direct MG fire against IFV side hulls even if the hull strength was sufficient

2. 383

- A line of sight algorithm has been refined to allow computer-controlled units more often to fire on detected enemy inside of buildings
- Added a function for suppressive fire. In the 3D view, select the current unit's context menus and select „SHOOT HERE", then click on the target location in the 3D environment. This corresponds with a new waypoint tactic called „SUPPRESS" which is similar to „STAY" except for shooting at the focus spot. Essentially, the „SHOOT HERE" command sets up the unit into a BP with suppress tactics, similar to how the „OBSERVE HERE" tactic sets up a unit into a BP with guard (IIRC) tactics. The shooting behavior is due for further refinement; right now, if there are enemy around, then it is the same as STAY tactics. If there are no enemy detected the unit will fire at a random line between the left and right boundary of the battle positions focus area, and between the ground and about 2.5 meters above the ground. Currently the focus area can only be changed through the map screen. Firing will start out rather rapid and then will become less frequent over time (so as not to exhaust ammo). To increase the intensity of suppressive fire the



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player needs to re-issue the „SHOOT HERE“ command. Eventually the detection of an enemy will also restart the counter for rapid shooting

2. 381

- 7.62mm coax ammunition now comes in belt segments of 250 rounds (for all vehicles)

2. 379

- Further refinements to the suspension and coincidence model
- In the ballistic model for the LEOPARD 2 the GAS is now zeroed to 1500m and the coax to 500m
- Fixed bug #112 partially (the first event and condition of one side could not be referenced in the control logic of the other side)
- Fixed bug #192 („COPY ROUTE CHAIN“ did not include formation spacing)
- Fixed bug #202 (formation changes are executed faster now)
- Fixed bug #222 (feature request for more detailed AARs)
- Fixed bug #267 (railway lines did not get bridged in the map editor's automatic bridging function)
- Fixed bug #337 (improved path finding in urban environments)
- Fixed bug #364 (position adjustments to maintain formation while under fire)
- Fixed bug #454 (feature request for a platoon-wide reload command)
- Fixed bug #466 (T-80 APU damage bug)
- Fixed bug #467 (T-72 and T-80 carousel loader vulnerability)
- Fixed bug #497 (disabled crew positions remain locked during network sessions)
- Fixed bug #546 (computer-generated artillery missions are now being deleted from the queue after their execution)
- Fixed bug #563 (some ammunition types did not register as AAR events)
- Fixed bug #610 (it is now possible to split and merge platoons in the planning phase)
- Fixed bug #638 (spawned units became uncontrollable under certain circumstances)
- Fixed bug #668 (computer-controlled units would not fire on bunkers)
- Fixed bug #771 (for some light vehicles the driver was seemingly invulnerable)

2. 374

- Fixed the armor definition file of the Strv122
- Fixed several issues in the ballistic model, including a reduction of the DM12A1 dispersion from .30 to .24 mil standard deviation (.16mil for 50% threshold). Also a number of sources for (small) deterministic errors could be eliminated. One deterministic error of .03mil remains which will get bigger at very long engagement distances
- The B team of dismounted infantry now carries an MG3
- The CV90s no longer use the hull's roll (cant) in the stabilization
- The CV90/35 interior has the CV90/40-C interior model as a temporary placeholder and the crew positions are activated



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- Weapon coincidence model: A decidedly non-scientific stabilization fudge factor is also in place, with most Russian vehicles having worse stab systems than Western vehicles. The sights will be pretty stable, but the guns will move around a bit if the hull is rocking and rolling
- The CV90s now have the variable coincidence window in place to disable firing when out of coincidence
- Fixed bug #274 (Suspension damage will now reduce the top speed that a vehicle can have)
- A new suspension model is in place. It will be related to the bumpiness factor that is set in the terrain theme that is currently loaded. This means that you should critically review existing terrain themes. High bumpiness should be reserved for terrain with extreme roughness, e.g. a boulder-strewn mountain or desert terrain.
Bumpiness will now influence the top speed of vehicles. MBTs are a bit more resilient against bumps (since they have a high mass/inertia and also because they're tracked), but they will suffer suspension damage if crashing at top speed into bumpy terrain; the computer-controlled drivers are supposed to reduce speed then, but can be overridden by a new acceleration command

2. 373

- Fixed a bug where in missions with spawning units the AAR would show two vehicles overlapping each other
- Added artwork of the KONGSBERG PROTECTOR remote weapon station
- Added RBS70 dismounted air defense missile
- Added 2S6 TUNGUSKA air defense vehicle
- Added dry river beds (*WADIS*). In the map editor, start the theme editor and designate a terrain as of „WADI“ type. Then paint/apply that terrain as you would with water. The maximum depth of a WADI is 15m below its surrounding surface; it will get deeper the more WADI terrain tiles are adjacent to each other
- Fixed bug #819; added heterogeneous platoons. In order to mix different vehicle types in one platoon, create a platoon as normal, split it into individual vehicles, change their type, and then merge them back into one platoon
- Fixed bug #820; added the option of a dismounted artillery observer. Press the F2 button to access the observer's sight view

2. 372

- Added CV90/35 (external model)

2. 370

- Decreased sensitivity for vehicles in „Stay“ tactics to reposition themselves near the dedicated waypoint
- Some changes to infantry movement and avoidance routines. This will hopefully help in MOUT scenarios.
- Some changes to the aiming/shooting routines of computer controlled gunners when confronted with very close ranges.
- Fixed a bug in the map view that could reduce your frame rate to about half the normal value
- Fixed bug #769 where the turret roof of the Leo 2A4 wasn't rendered in the LEOPARD 2A4's vision block view



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- Fixed bug #1248; reduced the dispersion of the 25mm Bushmaster gun (all ammunition types)

2.369

- Corrected and added some tactical icons
- Fixed bug #180 (Reload command on Leo AS1 now works with smoke and HEAT rounds)
- Fixed bug #454 (Reload command for platoons).
- Fixed bug #563 (Some ammunition types did not register as events in the AAR)
- Fixed bug #616 (ASLAV-25 can now have main gun damage)
- Fixed bug #845 (IFVs rarely fired HE rounds at infantry)
- Fixed bug #1013 (Tiger's cannon had too much ammunition)
- Fixed bug #1030 (Adjusted TOW air drag to allow the missile up to 200m climbs before stalling)
- Fixed bug #1045 that would occasionally lead to computer-controlled vehicles fire through deep forests and hills
- Enabled Windmill animation

2.368

- Fixed bug #394 (No sounds when the gun hits the back deck inhibitor)
- Fixed bug #637 (main gun would fire before it had moved back from loading into firing position)
- Fixed bug #951 (LEO AS1 and 1A5-DK had a small hole in the turret lower bustle)
- Fixed bug #993 (BMP-2 zoomed external view is below ground)
- Fixed bug #995 (Moving below hatch level while using binoculars would replace the environment with the interior vehicle sky box)
- Fixed bug #1000 (constant opening and closing of hatches of computer controlled crew members without apparent reason)
- Fixed bug #1004 (M88 TC's MG was 7.62mm, not cal .50)
- Fixed bug #1020 (extended zoom range in Map Editor)
- Fixed bug #1021 (M88 could tow live enemy vehicles)
- Fixed bug #1026 (Sound loops not terminated when player vehicle is killed)

2.367

- Fixed a bug that would let the RB57 ATGM fly through an obstacle before the warhead activation
- Fixed bug #313 (a higher rate of fire could be achieved with cal .50 HMGs when pressing the spacebar in a fast sequence)
- Fixed bug #374 (in the AAR the first event would not show properly until skipping to the next, then back)
- Fixed bug #451 so that in the AAR the arrow keys will again enable map panning
- Fixed bug #500 (Computer controlled gunners would not scan the horizon but terrain immediately in front of their vehicles)
- Fixed bug #541 which improves the behavior of column formations if the lead vehicle starts to back up
- Fixed bug #879 (inconsistencies in the behavior of computer controlled units with „Open fire, if...“ conditions, especially at close ranges)
- Fixed bug #998 (missing artwork made the BUSHMASTER gunner's position unusable)



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- Fixed bug #1023 (some hits were recorded and counted twice, both in AARs and gunnery range missions)
- Computer-controlled ATGM gunners will now wait a little to let targets move into open space before opening fire
- Updated and improved a number of Bradley tutorials
- Improved and added a number of Artillery tutorials

2.365

- Fixed a bug that would crash SB Pro if a helicopter fired AP rounds at IFVs with troops mounted in open hatches
- Fixed bug #670 (open hatches were affecting the BRDM2's ability to engage targets)
- Fixed bug #813 (the M113 AS4 had a tendency to aim low)
- Fixed bug #930 (ineffective use of the BMP-2s autocannon; the BMP-2 now engages targets with its gun more aggressively)
- Fixed bug #960 (even with „turret clock“ damage there still was an indicator for the commander's viewing direction)

2.362

- In the planning phase of network sessions the **INSTRUCTOR HOST** can now disable mission logging for the client machines
- In the mission editor is a new option to disable battle readiness at mission start. The stabilization will be switched off, thermal imagers will need up to a few minutes to cool down. If no humans are occupying crew positions, crews will perform a startup sequence. If both commander and gunner are present, nothing will happen. If only one of the positions is controlled by a human player, the startup sequence will start after an initial delay of five seconds
- For all IFVs it's now possible to address the assault and fire teams independently after dismounting the squad

2.361

- Fixed bug #990 (all units were disappearing from 3D view when SB Pro switched from fullscreen to windowed mode during a session)
- Added 3D interior for IFV PIZARRO

2.360

- Fixed a bug that would cause a crash when previewing OpFor units in 3D while testing from within the mission editor. It could also occur while cycling through units via the *F10* hot-key

2.359

- Fixed a bug that would reveal OpFor positions during the planning phase while activating Lines of Fire that would include OpFor units
- Fixed a bug which led to certain textures being picked from the wrong directories. Road and house textures for Winter or Desert themes will now be picked from the corresponding Winter and Desert folders and no longer exclusively from the Woodland folder. This is also relevant for eventual mod packages

2.358

- Crew positions in network sessions are now limited based on the settings in the mission editor. The exception is that the external position will always be available in network sessions



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- Fixed a bug that would prevent the settings of event-based subscores to be properly displayed when opened up again for editing. They still saved OK, but displayed wrong
- Fixed a bug that would mess up the terrain preview in the map editor after importing DTED contour data. (The map had to be saved before the terrain could be previewed)
- Disabled the option to save battle plans. This is a temporary measure

2. 357

- Added „Driver's" station (F9) as a co-pilot in several helicopter models (in versions allowing direct access (F7) of helicopter crew positions)
- Changed the door gunners' position in the CHINOOK helicopter model
- Eliminated the obstructing and excessive muzzle flashes of door MGs

2. 356

- Fixed a bug that resulted in short rounds if MGs were fired across great height differences (e.g. from helicopters)
- Added door gunner stations (F6) to GRIFFON and CHINOOK helicopters
- Added a generic weapon sight (F2) to HIND and TIGER helicopters' WSO station (F6)
- Added a generic blue HUD compass for helicopter crew positions

2. 354

- IEDs are now four times more powerful
- Fixed a bug with helicopter icons on the map screen
- The ASLAV-PC and BUSHMASTER now have the option to be equipped with a remote weapon station (RWS)
- A bug was fixed in internal routines evaluating the lethality of munitions against the currently engaged target

2. 353

- Extended the zoom range in standard map view a bit more to allow large maps (60x60km² and up) to be fully displayed
- Map sizes of up to 120x120km² are now possible though they require close to 2 GByte of RAM, which is the upper limit for applications in 32bit operating systems
- For the instructor host, the show menu will be active during the simulation to allow him to see the actual positions of the unit symbols or the reported symbols
- A bug was fixed that gave computer-controlled units unrealistically high situational awareness in their flanks and rear

2. 351

- Significantly extended zoom range in standard map view
- Fixed artillery queue countdown display for all fire missions which are not imminent
- Fixed bug #316 (it was possible to fire the Laser in the Leo 2 with higher frequency than in real life)

2. 349

- AARs now capture the location of smoke objects



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STEEL BEASTS

Professional
Version History

- Track damages are now being visualized by the absence of any track. Eventually a track element on the ground will be added, but for the moment that's not the case

2.347

- Added ISO containers as new obstacle types, with subtypes
 - Air filled (minimal resistance but blocks LOS)
 - Sand filled (will withstand all small and medium caliber rounds and even many large caliber rounds)
 - Accommodation (standard; like air-filled, but will start to burn if hit by HEAT or HE rounds)
- Added option to save AARs to harddisk, and to load AARs for mission evaluation at a later date
- Added M88A2 armored recovery vehicle; can take vehicles in tow, and accelerate repair times
- Added commands to the tactical icon display area in F1 view (bottom, right-center)
 - If in IFV: „Unload troops“
 - If in command of a dismounted squad: „Mount vehicle“

2.342

- Added vehicle specific damages that can be assigned in the mission editor
 - Turret clock (disables turret clock indicator in the F1 view, not those that may be part of a 3D vehicle interior)

2.340

- Added NATO cardboard targets
 - Three plates for boresighting purposes
 - MBT turret
 - MBT front
 - MBT side
 - 3D MBT target
 - IFV front
 - IFV side
 - 3D IFV target
 - Truck side
 - Dismount, running
 - Dismount, kneeling
- Added PIZARRO IFV (external model)

2.339

- Switched from uniform random distribution to a Gaussian model of shot dispersion. The practical differences for large caliber rounds are small, for medium caliber rounds they may be more prominent but spectacular deviations should still be rare
- Added heavy weapons teams (three-man half-squads with one of the following hvy weapons:
 - cal .50 HMG
 - ATGM missile launcher (visualized by Milan launcher on tripod; missile can be set to Milan (default) or Javelin)
 - Mk 19 automatic grenade launcher
- Added feature to sink infantry into forest ground for better cover and concealment. Player-controlled infantry is not RENDERED to be sunk into the ground as deep as it actually is being treated by the LOS calculations and collision detection in order to give the player a better impression of his squad's orientation and activities



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- Added observation arcs with reference point for hull-down position adjustment in the absence of enemy. Reference point also gives a point to point line of sight analysis from waypoint to reference point (if circle is black: No LOS. If circle is transparent: LOS given)
- Added BUSHMASTER armored truck (motorized infantry carrier), referenced as a Personnel Carrier in the menus and treatment as far as control logic is concerned
- Added TIGER helicopter (with HELLFIRE missiles, limited to 4000m (since this is the LOS cut-off and render distance for all vehicles and other objects), HYDRA HE/FRAG unguided rockets, and 30mm gun)
- Added Javelin missile
- Added Mk 19 AGL with three types of ammo - HE, HEDP (both US origin), and HEAT (German origin); currently no mix in ammo belts is possible
- Added a feature to render buildings occupied by one's own squad as semi-transparent so that it no longer totally blocks the view (which made both the external view and the binocular view useless before). Also, the building will be ignored now when using the „lase“ function to denote a waypoint in the 3D environment, or using the advance to.../retreat to... function, plus the Shift+Lase function to „tag“ (enemy) units or locations
- Added new 120mm munitions types,
 - M1028 Canister
 - DM33-PELE sabot

2. 328

- Fixed bug #58 (dismounted engineers' squad icon)
- Fixed bug #99 (Helicopters now only switch off engines after a proper landing)
- Fixed bug #102 (Fire on burning church is detached from the building)
- Fixed bug #127 (Improved thermal signatures for Bunkers)
- Fixed bug #166 (Hotkey X makes HIND move forward)
- Fixed bug #298 (Breaking up platoons and merging the sections later now results in proper unit designations)
- Fixed bug #367 (improved aiming for more vulnerable spots or targets)
- Fixed bug #423 (using the tree scatter tool on forest areas now results in tree replacement)
- Fixed bug #475 (Improved movement of troops within built-up areas)
- Fixed bug #501 (vehicles now continue reloading in multiplayer sessions if left alone by the player)
- Fixed bug #531 (M1 TC's hatch now locks in proper position)
- Fixed bug #630 (Sound of interrupted cal .50 reload process not properly synchronized)
- Fixed bug #663 (M1 TIS reticule pixel error)
- Fixed bug #740 (adjusted MERCEDES GD240 vulnerability, especially to small arms fire)
- Fixed bug #755 (Improved thermal signatures for many vehicles)
- Fixed bug #761 (adjusted rules for RPGs fired from within buildings)
- Fixed bug #787 (levitating vehicles in network sessions)



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Version History

- Fixed bug #807 (SB PRO PE crashed to desktop when using the „Position“ drop down menu while controlling infantry)
- Fixed bug #815 (reduced cal .50 muzzle flash)
- Fixed bug #818 (Tweaked collision model; a human operator must be in control of at least one of the colliding vehicles; collisions of computer-controlled vehicles with static environmental objects are less likely to result in severe damages)
- Fixed bug #842 (transient noise artifacts in multiplayer sessions)
- Fixed bug #852 (Manual steering from F8 position of multi-crewed vehicles now enabled)
- Fixed bug #864 (RPGs are exploding on the inside of walls of the buildings from which they are fired)
- Fixed bugs #865, #866, #876 (Driving behavior improved especially for road marches)
- Fixed bug #867 (Network sessions: The ammo levels in PCs can get out of sync between clients and hosts)
- Fixed bug #869 (Network sessions: Client computers lose control over their organic dismounts)
- Fixed bug #870 (M2/M3 BRADLEYS were too tough to kill)
- Fixed bug #871 (The CV90 tutorial dealing with UGV caused a crash to desktop)
- Fixed bug #872 (Deploying a UGV inside of a house made the building collapse)
- Fixed bug #873 (Network sessions: AAR event messages were timing out, making the AAR look very incomplete for clients)
- Fixed bug #874 (engines would turn themselves on frequently, even after stopping and having no contact with enemy and no orders)
- Fixed bug #875 (Network sessions: Client owned vehicles did not get repaired. The timer will eventually expire for them, but whatever is broken will stay that way)
- Fixed bug #877 (Engineers would not mark breached lanes)
- Fixed bug #878 (Consistent tree collapse in network sessions, irrespective of host or client ownership)
- Fixed bug #883 (small rock clusters now require top speed collisions to cause serious damage)
- Fixed bug #886 (Computer-controlled BRDMs would not open fire on ASLAVs unless human observer was present)

2. 304

- Refinement of vehicle collision model
- Fixed bug #380 (more stable bridge-crossing behavior in the presence of enemy forces)
- Fixed bug #411 (a scoring issue in some of the Bradley tutorials)
- Fixed bug #539 (M1 ABRAMS too likely to catch fire)
- Fixed bug #568 (Text labels of triggers >#32 disappear when used)
- Fixed bug #637 (Gun ready to fire before loading position has been left for firing position)
- Fixed bug #721 (Coax firing techniques for moving targets improved for CV90's computer controlled gunner)
- Fixed bug #786 (All computer control logic was accidentally disabled in network sessions)



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Version History

- Fixed bug #791 (Amphibious vehicles occasionally sank into the ground itself)

2.302

- Moved ATGMs for T-xx tanks to main gun storage area. (Existing missions with T-xx tanks that have non-zero ATGM counts should be updated in the mission editor to ensure the proper ATGM count)
- Vehicles with mounted troops will not open their troop hatches unless the troops are in the vehicle

2.300

- Updated some light vehicles' armor files
- Fixed bug #35 (Leopard 2 gunner can now change TIS settings while in KH MODE)
- Fixed bug #59 (Troops no longer dismount automatically after engine turn-off)
- Fixed bug #128 (Assault bridges appear on both sides' maps)
- Fixed bug #650 (vehicles severely damaged or even killed by small-arms fire while moving towards the attacker)
- Changed model geometry of LEOPARD 2 tanks to close a ballistic hole (similar to bug #650)
- Fixed bug #746 (Map view panning while typing labels)
- Fixed bug #756 (AT-6 „SPIRAL“ reduced to 600mm RHAe)
- Fixed bug #100 (Clicking on the „Exit“ button in the map screen will no longer activate the mouse steering in the next view)
- Fixed bug #150 (T-72 no longer shoots at distant targets with primary sight damaged)
- Fixed bug #154 (saved plans with units moved to the edge of deployment zones locked those units in place)
- Fixed bug #334 (T-xx gunner's hatches now closed)
- Fixed bug #586 (Loading of PLN files during the planning phase blocked proper spawning of units)
- Fixed bug #732 (AARs now show troops that were killed inside of buildings)
- Fixed bug #748 (Selecting buttons and devices in 3D interior no longer are also treated as steering impulses)
- Updated all MBTs' armor files
- Reduced external sound levels further when inside a vehicle.
- Engines for helicopters can be turned off only when landed.
- Adjusted brightness of thermal textures for a more consistent look
- Adjusted floating height of amphibious vehicles
- Added emplacement depth options for CV90/40 and ASLAV
- Added Instant Action scenarios for all playable vehicles
- Added Gunnery Range scenarios for all playable vehicles
- Expanded manual by a section on CV90
- Expanded manual by a section on STRV 122

2.299

- Mines that explode near combatants will now show up on the 2D map as a green minefield
- Added feature to write hot keys to an HTML file



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Version History

- Added tool to convert the map projection type in the map editor. (Available in classroom version only)
- Fixed bug in which crew information was not being sent properly over the network in certain special cases in network sessions
- SB will now search all subfolders of the standard scenario locations when joining a network session and searching for the scenario that is loaded by the host
- Pressing one of the view hot keys (F1, F2, etc...) when already in that view will now toggle the mouse steering on and off
- Expanded the amount of information in the HTML AARs by logistics as well as a detailed tracking of events, their times, and locations
- Added the ability to create a completely user-defined language by adding a folder with language name to the ..\loc\ folder. (Start by duplicating a language of your choice, then translate the content of the files and/or replace the wave files)
- Added tutorial for the employment of HE grenades from a vehicle's grenade launcher
- Added tutorial for the employment of bridgelayer tanks
- Added tutorials for CV90/40 gunner and commander
- Added multispectral smoke, and Galix protection system
- Fixed bug #87 (ammunition count in T-72 and T-80)
- Fixed bug #231 (M113 AS4 no longer amphibious)
- Fixed bug #318 (turret rotation speed with hull turning into the same or opposite direction)
- Fixed bug #321 (turret rotation speed with hull turning into the same or opposite direction during network sessions with human gunner and commander)
- Fixed bug #363 (artillery delivered smoke now properly obstructs view of computer-controlled forces)
- Fixed bug #450 (Loss of alignment if gun is in back-deck clearance area is now indicated in the gunner's primary sight)
- Fixed bug #527 (M1's cal .50 and loader's MG now don't collide as easily as before)
- Fixed bug #559 (HIND now less vulnerable to small-arms fire)
- Fixed bug #570 (FIST-V day-channel and thermal view were not properly aligned)
- Fixed bug #581 (LEOPARD 2A4 battlesight procedure is now working properly)
- Fixed bug #641 (Infantry marked as killed on the host computer now gets properly killed on client machines, too)
- Fixed bug #655 (infantry ATGM launch sound)
- Fixed bug #656 (Bridges laid in network sessions can now actually be crossed)
- Fixed bug #692 (improved aiming procedures of computer-controlled gunners)
- Fixed bug #709 (added hotkeys to initiate a refill of ammunition ready compartment (no longer needs menu action to do it))
- Fixed bug #715 (remote control of other vehicles' cal .50)
- Fixed bug #717 (some maps didn't show properly georeferenced grid coordinates)
- Fixed bug #726 (GALIX grenades now listed as of French origin – how could that possibly happen? Mon dieu...)



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Version History

- Fixed bug #738 (a missing resource file error for some languages)
- Added SPAG dummy for constructive simulation purposes
- Light vehicles can now get damaged in collisions with tanks
- Own troops now survive collisions with vehicles. Enemy troops can still be run over, though
- Made change in network code to make SB more tolerant of large system stalls (caused by memory swapping, for example) to greatly reduce the chance of a disconnection in a network session

2. 294

- Adjusted CC TC behavior with respect to target selection and overriding of human gunners
- Fixed bug that caused laid bridges not to be recognized at times by client machines in network sessions
- Added TOW 2B missile (top attack)
- Adjusted network code to loosen requirements for clock synchronization between host and clients
- Added CV-9040B infantry fighting vehicle
- Added CV-9040C infantry fighting vehicle
- Added STRV 122 Swedish main battle tank
- Added rearward driving camera view for driver's place of STRV 122 and LEOPARD 2A5 DK
- Infantry can now occupy buildings
- Squads may now drop an unmanned ground vehicle (UGV) which can be remotely controlled and provides thermal and optical camera views from locations up to 300m away
- Added CH-146 „GRIFFON“ helicopter
- Added CH-47 „CHINOOK“ helicopter
- Fixed bug that caused SB to fail to load certain missions and maps if the user logged into a Windows account without administrative privileges
- **BATTLESIGHT** key for gunner's position in the LEOPARD 2A4 now works
- Troops will now check for friendly forces in their sights before firing, to reduce fratricide
- Removed jerkiness in pitch of tanks when they make slight turns
- Proper RPG sound will now play when RPGs are fired
- Changed the way that the CC gunners deliberately add error to their aiming (which is meant to avoid repeated hits at hard spots or possible obstacles). Initial shots at targets now have no aiming error added

2. 273

- Set error for infantry firing RPGs to be higher so they miss more often
- Added new feature for infantry to enter into buildings when given hold, defend or none, tactics. (Infantry stay outside of building with guard tactics)
- Fixed bug that caused BRDM2ATs to rise above the ground in network sessions when they engage an enemy
- Fixed some problems with the driver's position in network sessions
- Fixed bug in which soldiers can see up to 1000m, even if visibility is set to less than this



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- Fixed bug in which bunkers or abatis moved during the planning phase during a network session by one player would not be reflected on other machines
- Fixed bug in which mounted troops of spawned units would not be owned by any player once spawned

2.266

- BRADLEY TC eye view no longer has bottom 10% of screen blacked out
- Only mine-plow and mine-roller tanks will turn their turret over their side when breaching
- Fixed bug that causes SB to crash on some Windows 2000 machines
- Added new window to set parameters for the distance of terrain rendering levels of detail. This window can be accessed at any time with the (default) hot key of **ALT+D**, and through menu items in certain screens
- Hot key files will be updated properly when new hot keys are added
- Adjusted network code
- End points of bridges that are in water will be placed about 1.5 meters above the water. This makes it possible to create a bridge with a gap in the span, to simulate a hole in the bridge
- Fixed problem with giving squads of size greater than 8 to other players in network sessions
- During network sessions, two of the terrain detail levels will be set to the host machine's settings, and then locked
- Fixed bug with triggers that have numbers greater than 31

2.262

- Reduced size of soldiers
- Updated some sound and mission files

2.261

- Modified adjust-fire model for artillery so that the direction line displayed in the window is the direction to target, not the direction to the arty field
- Adjusted timer code to better handle multi-kernel machines
- Fixed bug that prevented the HIND from firing at enemies at times
- Computer-controlled commanders will button up in forests more readily when moving to prevent getting hurt by branches

2.259

- Infantry will fire ATGMs higher at targets that are behind ridges
- Increased maximum climb angle for TOW missile
- Revised armor values for Bradley and Mercedes

2.257

- Fixed problem with T-72 armor settings that left it vulnerable from the front
- Positions of vehicles in AAR are more accurately recorded now, so that corresponding hit rays match up more correctly



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- Non-lethal hits that happen to hit a vehicle when it is killed will no longer be recorded in the AAR as an event to avoid confusion over what killed a vehicle
- Fixed bug that was causing CC gunners to aim too low
- Fixed new bug that caused infantry to flicker
- Fixed bug in evaluating conditions with „total strength“ sub condition
- Reduced time for coax repair to 50 seconds
- Map damage will now be passed down to attached troops
- Extended option in mission editor to restrict map updates and map view to all Pro versions of SB
- Modified vehicle behavior on bridges
- Added option in Option Screen to select between jpg and bmp image formats for screen shots
- Fixed bug that allowed artillery to be called when no artillery support was given in the mission editor
- For the arty adjustment window, the left, right, add, drop increments have been refined to be a bit finer
- Changed main loop so that SB will continue to run when minimized during a network session. SB will pause when minimized if not connected to a network session. (SB minimizes when it loses focus in full-screen mode.) Added back ability for SB to be minimized in windowed mode (by clicking on SB icon in Windows toolbar)
- Corrected some misnamed Finnish voice files
- Credits music will play just once now (no looping)
- Fixed bug in which infantry could fire when in water
- Vehicles will now try to avoid detached turrets from destroyed tanks
- Adjusted LOS settings through forests to make AI units less likely to see an enemy through a forest
- Changed rendering of ground-clutter objects to reduce rendering anomalies of large ground-clutter objects (Ground clutter is NOT supposed to be large, but there are too many maps being created with large ground clutter to use ignore this.) Frame rates will be reduced in some cases now because of this change. (If frame rates are too low, try setting the detail level to Medium or Low in the Options Screen)

2. 255

- Commander interior is now available in M3A2
- SB will compensate for some obsolete texture file names in the themes. (SB will search for .jpg files if there is a non-existent .bmp file name listed)
- Added text display when vehicles are being resupplied or repaired
- Repair times are now not displayed if a required truck or ambulance is required for repair
- Fixed bug in which hull angular speed was affecting the lead calculations
- Fixed bug in which loadout of first-used ammo is reduced by one
- AAR reports are now saved on client machines, in addition to the host machine
- Fixed bug in which BMP-1 missiles start off flying too high and so don't recover in time to hit the target



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- Fixed bug with joystick control of TC eye view on the FIST-V
- Fixed bug in which the loader's interior when viewed from the Peri in the LEOPARD 2A5 was transparent
- Fixed bug in HE grenade / smoke ammo loadouts for LEOPARD 2A5.
- Made change to allow SB to be run on Windows98
- Glass of Mercedes no longer will look bright in thermal view.
- Hot keys for GAS range adjustment was not working. This is now fixed
- Added 2-lane country paved road to map editor
- Fixed bug that caused massive explosion of 25mm HE round when hitting a soldier
- Fixed bug in which 25mm HE round was not exploding when hitting the ground
- Adjusted frame-rate smoothing algorithm for better performance
- Added hot key for LEOPARD 2A5 gunner's mag toggle (since it was interfering with the 1st-return hot key for the 2A5)
- Fixed bug in which alternate vehicles in column formation to not scan to the left
- Modified AI driver behavior for column formation when halted. Now drivers will move towards the column line rather than waiting for the lead vehicle to move out
- Fixed bug in which old missions with troops had squad sizes of 16, rather than 6
- Fixed bug in classroom version in which TC pulled gunner off of target when target was given an offset (deflection of shot) in the mission editor
- Fixed bugs with map graphics not being properly sent over the network to other machines
- Added buttons in score windows to move sub-scores up and down to re-arrange their order
- Fixed bug with ground texture caching that caused missions that use the same piece of terrain, but different terrain themes, to have distant ground terrain look messed up

2.251

- Fixed problem with embedded maps, in which ground under water be dug too deep
- Removed UAV routes with fewer than two points
- Fixed bug that caused MARDER's 20mm round to be too weak

2.250

- When TC is unbuttoned, external gun sound will now play.
- Thermal views in most tanks has been made more realistic by reducing resolution and adding noise
- Improved TOW flight model
- Improved modeling of BRADLEY FCS
- Fixed bug 29: Results from tank range now displayed
- Fixed bug 438: Host can re-assign players in network session without accidentally removing them from the session
- Fixed bug 441: Numbering in Events Points dialog box of scoring window is now correct
- Fixed bug 443: Company letters now appear in priority-of-fire box in the Support dialog box in mission editor



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- Fixed bug 445: BRADLEYS are now able to fire TOWs every minute when on assault route but will not stop otherwise on assault orders
- Fixed bug 446: MARDER will reload more than 1 round at a time
- Reduced sensitivity of joystick input
- Updated 3D interior models of M1A1 and BRADLEY. TC vision blocks now work in these vehicles
- Upgraded some building textures
- Upgraded some sounds

2.244

- Fixed CTD bug (433) when a map refresh is done on a mission with bunkers, and the bunkers are then moved

2.243

- Modified look of menu screens and some other UI features
- Added feature to compress height maps in the map editor. Compression is selected when the height map is first created (**File | New blank map**). Compression can be set to "lossless" or to higher compression factors (up to 100x) for lossy compression. Existing non-compress height maps can be compressed using **Options | Compress height map**, and then **Options | Save height map**
- Added features in the mission editor to embed the height map in the scenario file. (**Map | Embed height map**, or **Map | Link to height map**) If the height map is embedded into the scenario file, the amount of compression for the height map can be selected (with the minimum compression set to the compression of the height map itself). Embedding the height map in the scenario file will increase the size of the scenario file (higher compression means less of an increase), but embedding ensures that clients in network sessions will be able to run the scenario, even if the client is missing the height map on disk. This can also be a benefit if map security is an issue, since maps need only be stored on the instructor's machine
- Added feature to adjust map contour spacing, in the map editor, mission editor, and planning and AAR phase when the simulation is running
- Troops mounted in vehicles will no longer be counted in conditions that count unit numbers in regions
- Added feature to full pro version to disallow students from jumping to units other than the ones that they own. This flag can be set in the mission editor, and also changed by the instructor during a network session

2.242

- Increased size and resolution of ballistic tables for greater accuracy
- Ballistic tables now read from a resource file to prevent excessive loading times

2.241

- Fixed bug322: Rapid firing guns will no longer skip rounds (when a human player occupies the vehicle)

2.239



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- Fixed bug that caused crash when editing of some scores in the mission editor

2.238

- Increased rendering distance of ground cover objects
- Fixed bug that caused CTD when editing old theme files
- Fixed bug with old unit labeling
- Added „low“ and „high“ folders under the „terrain“ folder, for ground textures. Ground textures are now placed in these two folders, based on their purpose
- Added confirmation window when flood filling map in map editor
- Added new ground cover models
- Added additional options for vehicle status in condition window
- Limited mip maps of alpha ground transitions to prevent artifacts in terrain transitions
- Fixed „lase to“ feature

2.237

- Added new feature in mission editor to replace the map theme.
- Added new feature in mission editor to replace the map (using the current map size and offset)

2.236

- Added hot-key assignment feature for controls
- Removed help menu, because it is, for the most part, redundant
- Fixed mouse vector
- Fixed bug 399: grenades launched from ASLAV-25 no longer blow up when being fired
- Fixed bug 403: No more dust trails on paved roads
- Fixed bug 397: Roads have proper drag and traction
- Added feature in mission editor to select the platoon, company and size of the unit when it is created

2.232

- Changed palm switch for control handle from button 5 to 3.
- Fixed bug that caused invisible detail rocks to stop vehicles on roads

2.231

- Map editor will now add „.thm“ extension when saving theme files
- Woodland textures now serve as the default for texture files not found in the desert or winter folders
- Added „autumn“ option for terrain type in theme window of the map editor

2.230

- Added additional line objects in map editor. (Dirt and concrete types)
- Added option in Options Screen to select either joystick or real control handles as the input device

2.229

- Fixed bug 370 in which control mouse steering in AAR cannot be relinquished when a window is in the center of the 3D view



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- Fixed bug that caused trees to appear inside buildings
- Imported SB1 missions should no longer have palm trees in European terrain
- Fixed bug 372 in which main gun sound is played on BRADLEY
- Fixed bug in which M113 TOW and HUMVEE TOW would not fire missiles at distant targets
- Vehicles should no longer start a mission intersected with buildings or trees
- Added „terrain theme“ feature in map editor to allow customization of terrain for different world regions

2. 228

- Enabled instructor host to set triggers when he does not own the highest ranking combatant
- Enabled instructor to give any unit (not currently occupied by another human) to any player
- Fixed bug that caused rotated custom graphics to not appear correctly when sent to other players over the network

2. 227

- Fixed problem in which computer-controlled gunners would occasionally lose focus on target
- Widened tank emplacements slightly
- Added „Refresh on VSync“ in Display Option Menu screen
Refreshing during VSync will eliminate tearing caused by drawing to the display buffer while it is being displayed on the monitor. However, it will reduce the frame rate to some extent
- Fixed bug that caused hit rays in AAR to be off for fast-moving targets
- Fixed bug that allowed tanks with only one damaged track to keep moving in a straight line
- Fixed bug, in which HE grenades were not exploding
- Added string to display message for entering driver's position
- Adjusted the Leo2's peri response when in KH MODE

2. 226

- Adjusted ASLAV-25 FCS based on new information

2. 225

- Adjusted LEOPARD AS1 FCS based on new information
- Turret positions are now correctly displayed for non-gunnery states in the AAR
- In the AAR, the W and X hot keys to move forward and backward now work after pressing the World button
- Ambulances will now repair damaged crew members of vehicles. (They will not repair dismounts)

2. 224

- Corrected text display of some ammo types
- Adjusted joystick response
- Fixed display of hit vector in AAR for Red side
- Keyboard and other input is now reset when leaving the SB window, in order to prevent UI lockup
- Changed crosshair cursor in map editor to blue to be better seen



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2. 223

- Fixed bug: Missions with HINDs in them will now load properly

2. 222

- Fixed bug 304. TC buttoning should no longer cause human gunner or observer to go to F1 view
- Wheeled vehicles should turn appropriately with A/D keys when going backwards
- Fixed bug 303. BTR80 will now fire at the enemy
- Changed control of M1A1 .50 cal back to the way it used to be, where only the arrow keys control the elevation of the .50 cal
- Added self-destruct for FASCAM mine fields
- Changed map editor crosshair to white
- Vehicles that have drowned are now considered to be destroyed
- Fixed bug 44. „Lasing“ enemy targets from the observer position should work correctly now
- Fixed bug 84. Small HE rounds will not instantly destroy bunkers
- Improved effectiveness of HE rounds against infantry
- Adjusted scanning directions for AI gunner
- Scattered minefields now have a randomized pattern, rather than a row pattern
- For mine plow tanks, if the owning player presses the space bar in the observer position the mine plow will toggle up and down. (Breach routes will override this)
- Added hit vector in AAR to show where the target vehicle was hit
- Added information about the type of round that hit the target in the AAR
- When clicking on the World button in the AAR, the worldview will automatically move to the target vehicle (if there is one)
- Changed the panning controls in the AAR and planning phase to match that in the simulation phase. (View moves in proportion to mouse movement)
- Corrected tank clock in LEOPARD 2A5
- Refined exit locations for troops loading and unloading
- Troop doors now open and close when troops load and unload
- Added new BRDM-2, BMP-2, BMP-2AT, MT-LB, and JAGUAR 1A3 models
- Fixed bug in damage model, which caused excessive damage
- Fixed display problem through TC vision blocks in M113 A0
- Vehicles on sunken bridges will no longer sink below ground
- Troops should find bunkers quicker now

2. 218

- Added Australian trees and bushes

2. 217

- Added confirmation dialog box when using „save as“
- Fixed bug in new version that prevented missions with M3A2s to load
- Trucks hit by IEDs or HE and destroyed will be displayed as burning
- Hits by IEDs will be displayed in the AAR as „hit by IED.“



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STEEL BEASTS

Professional
Version History

- Fixed bug: Single round with „unlimited ammo“ checked will be unlimited
- Fixed bug: Can now move gun when the .50 cal is being reloaded
- Adjusted flying and aiming routines for the HIND
- Increased number of possible triggers to 64
- Implemented non-zero turning radius for appropriate tracked vehicles
- Fixed bug: Can no longer fire missile with launcher in down position
- Bridges can now be stacked on top of each other (when deployed by bridge layers)
- Fixed bug: Roads under bridges should no longer cause problems for the CC driver
- Fixed bug: FASCAM minefields now work properly
- Fixed new bug added in 2.215: Vehicles will no longer aim too low when the gun is slaved to the sights
- CC Gunners on tanks with damaged GPS and GAS will be able to see enemies only within 300 meters. (Vehicles with no GAS, like the T-72, need only have damage to the GPS for this effect)
- Adjusted M1A1 reticule behavior to be less sensitive.
- Fixed bug 275 (Copy graphic to other side now works correctly)
- Fixed bug 207: Troops should not automatically detect vehicles within 150 meters if visibility won't allow it
- Removed ID readout (using Shift key) in all versions except AU version, due to complaints. This will eventually be replaced by decal IDs on the vehicles themselves, in any case
- Fixed bug 244: In network sessions, playable „spawn if“ units can now be crewed (gunner, driver, TC) when the unit is spawned. The usual rules of ownership and privacy still apply, and spawned units are always owned by the player who started with the highest ranking unit
- Fixed display of artillery called by other players
- Mission-time discrepancies between client and host are now corrected, when possible. These discrepancies can occur if the application is minimized, or the window is moved or resized. Small, isolated discrepancies are corrected, but large or frequent discrepancies will cause the client to be removed from the network session. (Steel Beasts should NOT be minimized during a network session, since it cannot respond to network messages.) Frequent discrepancies can happen if the system clock is malfunctioning, or if a program to speed up the clock is being used
- Fixed menu for vehicle icon (at bottom of 3D view)
- Fixed bugs 269 and 280 (same problem). Bradley's should now reload their missiles properly
- Fixed bug 294. Switching from stabilized to non-stabilized mode while traversing fast will no longer result in strange turret behavior
- Fixed bug 296. Made troops less afraid of water, and more likely to use bridges
- Added flashing text at bottom of screen indicating when the active unit is reloading
- Adjusted joystick response



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- Adjusted tree avoidance routine (for tanks)
- Added ability to move an entire route in the map editor
- Added feature for bridge layers to pick up bridges, manually, by pressing the space bar. The bridge layer must be in the correct position to pick up the bridge before pressing the space bar
- Reduce minimum arty field size to 20m x 20m
- Changed the „show“ menu of the map in the AAR so that both red and blue unit symbols or vehicle symbols can be seen
- Increased (internally) max troop squad size to 15
- Hitting dead vehicles no longer adds to the hit count, nor logs an event
- Improved vehicle movement through forests, especially when in reverse
- Added ability in conditions to test a unit for low ammo, low fuel, carrying troops, carrying bridge, and various types of damage. These additional options have been added to the sub-condition that tests whether a unit is under direct or indirect fire. For all of these options, the sub-condition is true if the test is true for any combatant in the unit being tested
- Fixed bug in which double clicking on map screen in mission editor failed to create a selection marquee
- In map editor, any part of the ending half of the „rotate bar“ of a selected object can be clicked on to rotate the object
- Added roll (cant) to all 3D views. The FCS of vehicles that should compensate for cant IRL will do so in SB
- Added new playable vehicles: LEOPARD AS1, ASLAV-25, ASLAV-PC, M113 AS4
- Added new non-playable vehicles: ASLAV-A (medic), ASLAV-CS (Logistics)
- Add train track texture for train tracks
- Added new friendly-combatant ID feature: In any 3D view, hold down shift key and place red aiming mark over a combatant. If the combatant is friendly, a text display of the combatant's ID will be displayed. This feature might be replaced later with a more realistic decal ID on the vehicle themselves
- Adjusted Leo2 GAS reticule according to new information we received

2.212

- Added wind turbine
- Fixed bug: TC calling „short“ or „over“ when round hits target
- Stopped smoke arty from triggering „under indirect attack“
- When autodrivers is off but still connected to a route, we now modify or delete the first route point by projecting the unit's position on the route.
- Capture F10 messages (which is a system message); use F10 for „Next Vehicle“ hot key. (F9 is used to go to the driver's station.) Removed menu bar in window so F10 system message does not affect SB
- Fixed problem with autologin mode, so that escape key always works to exit
- For autologin mode: Now disregarding Lt Default as call sign, and using any other registered player (with a ppf file). If there isn't a registered player, then we use the computer name as the call sign



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2. 211

- Added five new Iraqi buildings
- Adjusted collision avoidance for soldiers

2. 210

- Fixed bugs:
 - Hinds drowning when starting mission over water
 - Moving units in deployment zones during the mission
- Added driver's station
- Made generic tankUIs class
- Added LeoAS1 and ASLAV25 (FCS not working yet)

2. 209

- Modified some vehicle models (.x files) to make the box_meshes transparent, so that they are not rendered. These meshes are used for collision detection only
- Added new network feature to (full) professional version to allow SB to be set to „autologin“ mode. When in this mode, upon startup SB will automatically look for a network session and join it
The client user doesn't need to interact with SB at all in order to join the session. Pressing the *Escape* key, or clicking on the exit button while the client is searching for a session, or when it is in the staging area will take SB out of „autologin“ mode, until SB shut down and started up again. In order to permanently take SB out of „autologin“ mode, the user must set this options in the *Network Options Screen* (in the *Options Screen*)
This is, of course, where the user would set SB to „autologin client“ mode
- Added new network feature to (full) professional version, to allow the host to set the starting vehicle of any participant in a network session in the host's Staging Area Screen. First click on the participant's name to select it, and then click on the vehicle that the participant should control

2. 207